FUJICOLOR PRO 800Z PROFESSIONAL

1. FEATURES AND USES

FUJICOLOR PRO 800Z PROFESSIONAL is an ISO 800 high-speed color negative film that is especially suitable for portrait, wedding and fashion photography. By incorporating the 4th Color Layer and the Fine (Sigma) Technologies, this film produces vibrant colors with high fidelity, and smooth textures with little evidence of grain. It also boasts wide exposure latitude and excellent grays. The further addition of single-channel printing results in uniform printing efficiency with other films in the FUJICOLOR PRO series.

Features

- **High Sensitivity** ············ High ISO speed rating of 800 that assures fine results even under low-light conditions
- **Faithful skin tone reproduction** ········ Natural, true-to-life skin tones even in dark, low-light situations

  Natural skin tones even under overly flat lighting
- **Wide Light Source Latitude** ········ A fourth color-sensitive layer enabling the reproduction of desired images even under a mixed light source of natural light, fluorescent light and tungsten light
- **Excellent Textural Depiction** ········ Excellent, almost grain-free textures, regardless of the film's high sensitivity
- **Addition of single-channel suitability** ······· Negative density level unified with other PRO series films for maximum printing uniformity and efficiency

2. ISO FILM SPEED

Light Source	ISO Film Speed	Color Balancing Filter
Daylight & Electronic Flash	800/30°	None
Tungsten Light (3200K)	200/24°* equivalent	Wratten No. 80A (or LBB-12**)

*Indicates the effective speed resulting from designated filter use.
**Fuji Light Balancing filter

3. FILM SIZES, EMULSION NUMBER, BASE MATERIAL AND THICKNESS

	Size and Package Configuration	Emulsion Number
Roll	135 ··· 36-exp. (5-roll pack) 120 ··· 12-exp. [6x6] (5-roll pack) 220 ··· 24-exp. [6x6] (5-roll pack)	023–

	Base Material	Thickness
Roll	Cellulose Triacetate	122µm (135) 98µm (120,220)

4. EXPOSURE GUIDE

Use a meter to determine the exposure setting. If a meter is not available, refer to the following table.

Daytime/Outdoors

	Seashore or Snow Scenes under Bright Sun	Bright Sunlight	Hazy Sunlight	Cloudy Bright	Cloudy Day or Open Shade
Lens Opening	f/22	f/16	f/16	f/11	f/8
Shutter Speed (sec)	1/1000		1/500		

Notes
- The settings in the table above are for 2 hours after sunrise and 2 hours before sunset.
- Since light conditions vary greatly for cloudy/bright and open shade, use of an exposure meter is recommended.
- Close-up shots with backlighting may require a lens opening adjustment of f1 to f2 stops.

Low Light Exposure

Light Condition	Indoor Sports & Night Games	Nighttime Indoor Scenes (under fluorescent light)	Evening Scenes	Night Scenes
Lens Opening	f/2.8 to 5.6	f/2 to 4	f/4 to 5.6	f/2.8 to 4
Shutter Speed (sec)	1/25	1/30	1/60	1/30

5. EXPOSURE FOR VARIOUS LIGHT CONDITIONS

Daylight

Under usual daylight conditions, color balancing filters are not necessary, but the following exposure conditions may require the indicated filters.

Subject Conditions	Filter
Fair weather/open shade and shaded landscapes	Wratten filter No. 2C (SC-39*)
Bright distant scenes, snow landscapes, seaside scenes, aerial scenes and open landscapes	Wratten filter No. 1A (SC-40M*)

* Fuji Sharp-cut Filter (Ultraviolet)

For excessively high or low color temperatures, use of the color balancing filters is recommended.

NOTE :When artificial illumination is being used as the main or auxiliary light source either indoors or outdoors under conditions in which sunlight is present, the use of either an electronic flash or blue flash bulbs is recommended.

Electronic Flash

- Electronic flash produces light similar to daylight, so filters are not needed. However, the possibility of undesirable effects on color balance, due to various factors (the type of flash used and amount of time used, etc.) should be taken into consideration. Test exposures are recommended.
- If shutter speeds slower than 1/60 second are used, light from non-flash sources, such as room lighting, may cause color imbalances. Make test exposures.
- The use of a flash meter is advisable, but the following formula can also be used to obtain satisfactory lens opening.

$$\text{Lens Aperture (f-number)} = \frac{\text{Electronic Flash Guide Number (at ISO 800)}}{\text{Electronic Flash-to-Subject Distance (meters or feet)}}$$

When using an auto flash unit, the ISO film speed setting should be set to 800. Since the amount of light on the subject may vary according to amount of light reflected from surrounding surfaces and other factors, follow the instructions provided with the flash unit.

Flash Bulbs

With blue flash bulb exposures, compensating filters are unnecessary. With clear flash bulbs, however, use a Wratten filter No. 80C (Fuji LBB-8* filter) and increase the lens opening by +1 stop. However, since the light quality may vary with the bulb type and the manufacturer and the amount of light may vary with the lighting equipment and diffusion technique, test exposures should be made with the equipment being used.

* Fuji Light Balancing Filter

Daylight Photoflood/Photo-Reflector Lamps

- Daylight-type photoflood or photo-reflector lamp output may be lower than that indicated by the exposure meter. It is recommended to compensate for the difference by increasing the exposure time (by lowering the shutter speed) or by increasing the lens opening. Whenever possible, test exposures are recommended.
- Other factors that should be considered when determining the exposure settings are lamp configuration, length of time used and line voltage, as they may affect lamp output and color balance.

Fluorescent Lamps

When photographing under fluorescent lamps, it is recommended that a shutter speed range of 1/30 to 1 second be used to prevent influence from lamp flicker.

Tungsten Lamps

When using 3200K tungsten lighting, use a Wratten filter No. 80A (Fuji LBB-12* filter) and increase the lens opening by + 2 stops. In the case of cameras with TTL metering, there is no need for additional exposure compensation.

* Fuji Light Balancing Filter

6. LONG EXPOSURE COMPENSATION

For exposures of 4 seconds or more, the exposure compensations indicated in the table below is required. No exposure color balance compensation is required for exposures within a shutter speed range of 1/4000 to 1 second.

Exposure Compensation Table

Exposure Time (sec)	1/4000 to 1	4	16
Exposure Correction (Lens Opening)	None	$+^{2}/_{3}$ stop	$+1\,^{1}/_{2}$ stop

(Exposure time longer than 16 seconds is not recommended.)
The + sign indicates an increase in the lens opening.

7. EXPOSURE PRECAUTIONS

When using an accessory such as a reflector umbrella, reflector or diffuser to control light intensity or diffuse the light, make sure that no change has occurred in the color or composition of the accessory's materials or reflective surface, and that the color of the light has not been altered by the material.

8. UNPROCESSED FILM HANDLING/STORAGE

HANDLING

- Expose film before the expiration date indicated on the film package and process as soon as possible after exposure.
- When removing film stored at low temperatures (in a refrigerator or freezer, etc.), allow it to reach room temperature before opening it. Opening film while it is still cold may cause condensation to form on the film surface, causing color changes or the emulsion to become more susceptible to scratches.
- Roll film should be loaded and unloaded quickly and away from direct sunlight.
- Film loaded in cameras should be exposed and processed promptly.
- X-rays inspection machines used to inspect checked-in baggage at airports can cause fogging of film. Put both exposed and unexposed film into carry-on baggage (preferably in a transparent plastic bag or a net bag that allows the film to be seen). Because of the increasing number of airports using strong X-ray machines for carry-on baggage, it is recommended that you remove film from your carry-on baggage and request a visual (manual) inspection of your film.
- Film fogging may occur near X-ray equipment used in hospitals, factories, laboratories and other places where radiation is used. Always keep film away from sources of radiation.

STORAGE

Storing exposed or unexposed film under hot and humid conditions may adversely affect the speed, color balance and physical properties of the film. Although it is best to store film at a low temperature, for practical purposes, film should be stored as follows:

Short-term Storage	Store at a place (cool and dark) away from direct sunlight or high temperatures and humidity.
Long-term Storage	Store at 10°C (50°F) or below

- New building materials, newly manufactured furniture, paints and bonding agents may produce gases which could affect photographic film. Do not store film, lightproof boxes containing film or cameras or film holders loaded with film near these materials.
- Film should be sealed in plastic bags* prior to cold storage When taken out of cold storage, film should be allowed to reach room temperature before opening by letting it stand over 3 hours (for refrigerated film) or over 6 hours (for frozen film).

* Polyester, polystyrene, polyethylene, polypropylene, etc.

9. PROCESSING

This film is designed for processing by Process CN-41 or its equivalent, as well as Fujifilm Process CN-16.

10. CONTROL STRIPS

Use FUJICOLOR NEGATIVE FILM CONTROL STRIPS to manage processing performance.

11. PROCESSED FILM HANDLING AND STORAGE

Since the purpose of film is to provide a long-term record of memorable events, as much effort as possible has been made to use materials that exhibit the least amount of change over time, but the effects of light, heat, atmospheric oxygen, contaminant gases, humidity and mold cannot be completely avoided. It is possible, however, to minimize change in the photographic image or base material by maintaining appropriate storage conditions, such as those used by museums and art galleries. Temperature and humidity control is the most important key to minimizing the change that occurs in film. Films stored in the dark under the following conditions may be expected to show almost no change over time.

Storage Period with Almost No Change	Temperature	Relative Humidity
More than 20 years	Below 10°C	30%–50%
10–20 years	Below 25°C	30%–50%

(1) Color negative film should be inserted into sleeves for storage. Furthermore, it is recommended that film, as well as prints, be placed into non-airtight* containers made of paper, plastic**, or metal designed for the storage of photographs.

* To prevent film base (especially TAC base) decomposition, it is essential that the container or case be allowed to air out during one dry day each year.

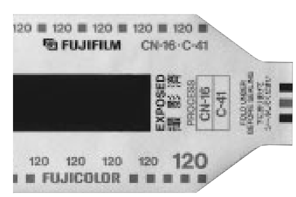
** Polyester, polystyrene, polyethylene, polypropylene, etc.

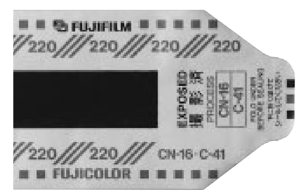
(2) Processed film should be stored at a place as far away as possible from high temperatures, direct sunlight and other strong light and direct illumination. The following conditions are not desirable for the storage of film and should be avoided in the case of long-term storage:

- Storage in a closet lying against a wall that is exposed to cold, outside air (where condensation may form).
- Storage in an attic or on top of a closet or cabinet near the ceiling (where high temperatures may form).

12. PACKAGING SPECIFICATIONS

* Packaging formats may vary in different markets.

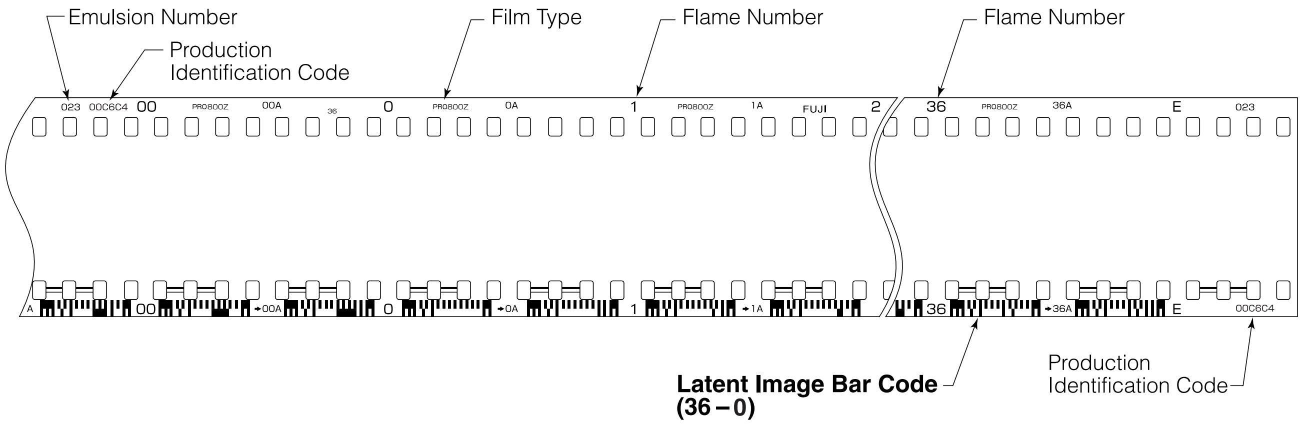
Size	Item	Contents
135	Film Box	
	Plastic Case	Same as the current product.
	Cartridge	
120	Film Box	
	Backing Paper	(Before Exposure)  (After Exposure) 
	Seal	 ←Backing Paper ←Top Seal  ←End Seal
	Envelope	

Size	Item	Contents
220	Film Box	
	Backing Paper	(Before Exposure)  (After Exposure) 
	Seal	 ←Backing Paper ←Top Seal  ←End Seal
	Envelope	

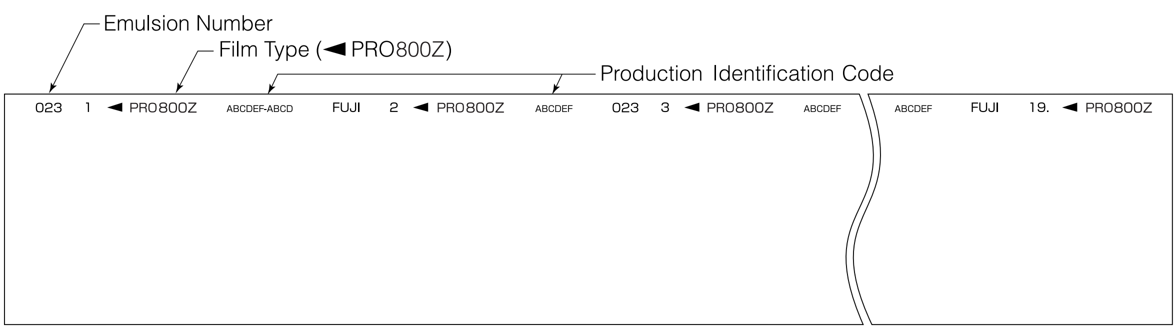
13. PROCESSED FILM EDGE MARKINGS AND FIGURES

* The side on which the edge markings are reversed is the emulsion side.

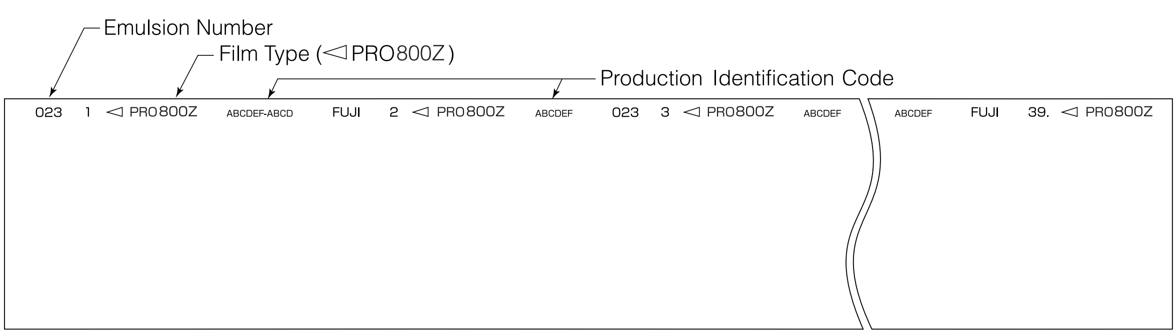
• 135 Size (36 Exp.)



• 120 Size (12 Exp. 6x6)



• 220 Size (24 Exp. 6x6)



14. TECHNOLOGIES INCORPORATED IN FUJICOLOR PRO 800Z PROFESSIONAL

14-1 4th Color Layer Technology

This film incorporates a fourth color-sensitive layer in addition to the conventional three RGB-sensitive layers in order to reproduce colors as they are perceived by the human eye. The optimized spectral characteristics of this film enable the rendition of natural colors even for photographs taken under fluorescent lights or mixed light sources.

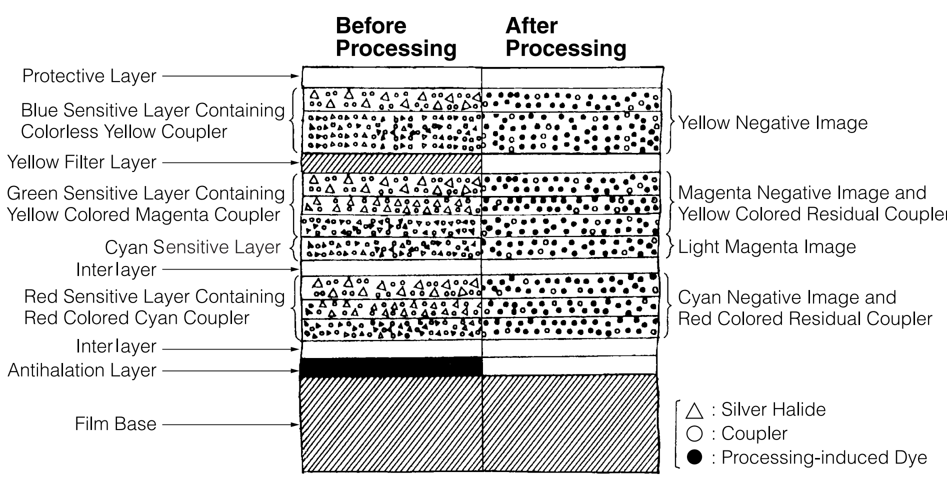
14-2 New Optimizes Interlayer Effect Technology

The control provided by the new optimized interlayer effect technology incorporated in this film makes possible faithful color reproduction, superbly vivid skin tones, and highly consistent gradation that is smoothly continuous from the highlights to the shadows whatever the situation.

14-3 Fine Σ (Sigma) Technology

Fine Σ (Sigma) Technology provides a new thin, flat grain structure that effectively increases the overall surface area of the small-volume silver halide crystals, producing higher uniformity among silver halide crystal clusters and making possible the attainment of high film speed without any noticeable increase in grain size. The result is a film that produces excellent textures, regardless of the film's high ISO 800 speed rating.

15. FILM STRUCTURE



16. DIFFUSE RMS GRANULARITY VALUE ····· 5*

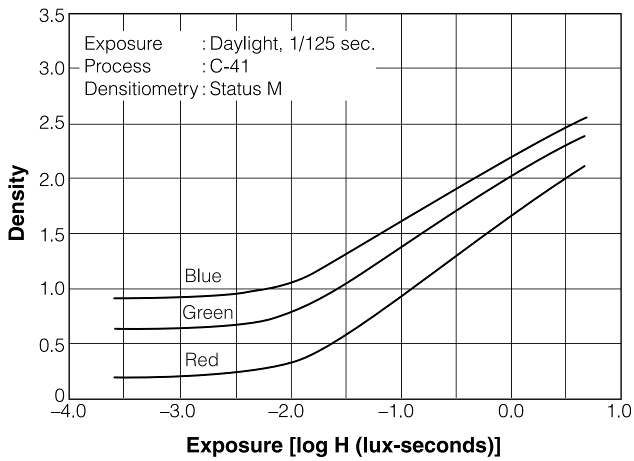
Micro-Densitometer Measurement Aperture
: 48 μm in diameter
Sample Density: +1.0 above minimum density

* Based on Fujifilm measurements. Due to difference in measurement conditions, comparison with color reversal film is not possible.

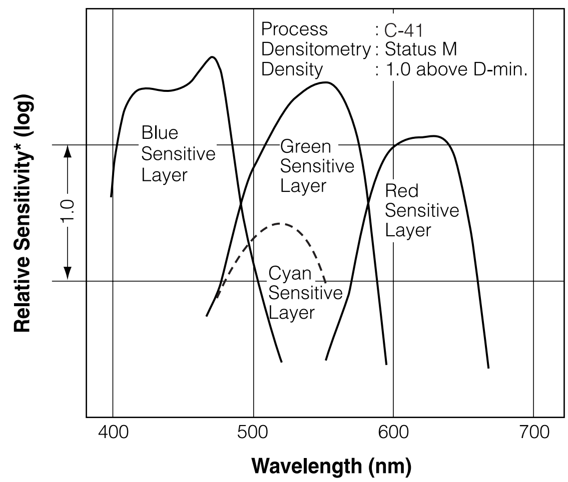
17. RESOLVING POWER

Test-Object Contrast: 1.6:1 .... **50** lines/mm
Test-Object Contrast: 1000:1 ....**115** lines/mm

18. CHARACTERISTIC CURVES

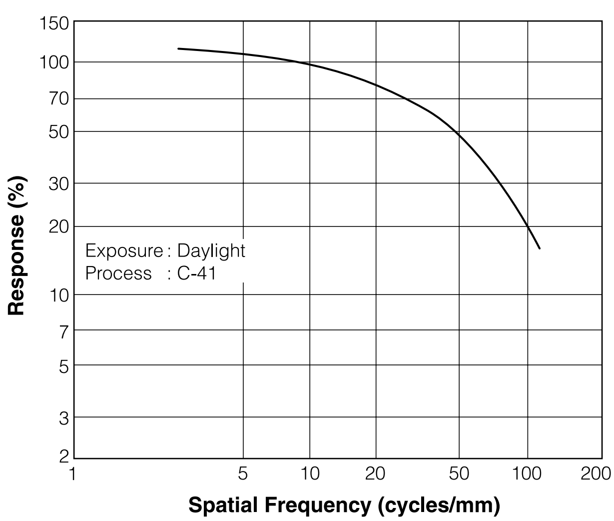


19. SPECTRAL SENSITIVITY CURVES

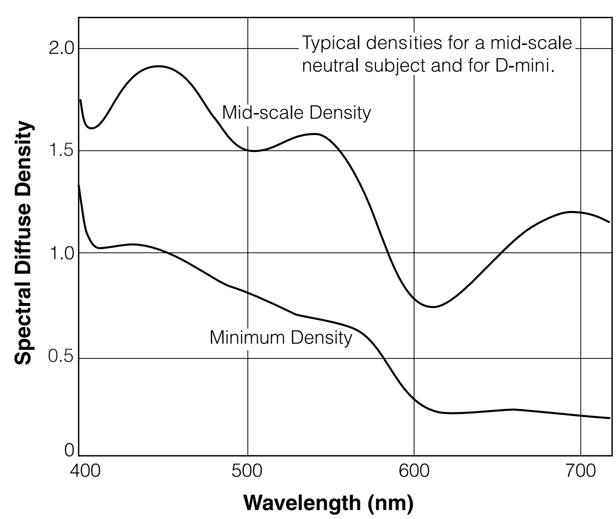


* Sensitivity equals the reciprocal of the exposure (J/cm^2) required to produce a specified density.

20. MTF CURVE



21. SPECTRAL DYE DENSITY CURVES



NOTICE The data herein published were derived from materials taken from general production runs. However, changes in specifications may occur without notice.

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